

AMENDMENTS TO THE CLAIMS

1. (currently amended) A light-emitting apparatus, comprising:
a primary light source including comprising a GaN semiconductor light-emitting device that emits a first light of a wavelength of 380 nm to 500 nm, said GaN semiconductor light-emitting device, including:
a single reflective layer disposed on a surface of a substrate on which no light-emitting layer is formed; and
a transparent electrode disposed above said single reflective layer; and;
a leadframe comprising a cup portion including a bottom surface on which said GaN semiconductor light-emitting device is mounted;
a secondary light source including comprising a fluorescent material that comprises at least one of ZnS:Cu, Au, Al; ZnS:Cu, Al; ZnS:Cu; and Y₂O₃:Ce, and a fluorescent material resin, said fluorescent material being dispersed within said fluorescent material resin, and said fluorescent material resin being contained in said cup portion; and
a sealing member that focuses light emitted from said light-emitting apparatus, said sealing member being disposed above said secondary light source,
wherein said fluorescent material absorbs said first light of a first wavelength; ~~emitted by said primary light source;~~ and emits a second light of a second wavelength, which is greater than said first wavelength.
2. (currently amended) A light-emitting apparatus according to claim 1, wherein
said fluorescent material is dispersed in a light-transmissible layer, which secondary light source is disposed above said primary light source,
a part of said first light emitted by said primary light source is transmitted through said light-transmissible layer fluorescent material resin, and
another part of said first light emitted by said primary light source is absorbed by said fluorescent material, said fluorescent material then emits said second light, and said second light emitted by said fluorescent material and said first light emitted by said primary light source are mixed, to thereby generate a mixed light, emitted from said light-emitting

apparatus, that is different in luminescent color from said first light emitted by said primary light source.

3. (currently amended) A light-emitting apparatus according to claim 2, wherein said ~~light-transmissible layer~~ fluorescent material resin comprises at least one of epoxy resin, silicone resin, urea resin, and glass.

4. (canceled)

5. (canceled)

6. (previously presented) A light-emitting apparatus according to claim 5, wherein said sealing member comprises at least one of epoxy resin, silicone resin, urea resin, and glass.

7. (original) A light-emitting apparatus according to claim 5, wherein said sealing member is shaped like a bullet.

8. (currently amended) A light-emitting apparatus according to claim 2, wherein a concentration of said fluorescent material changes within said ~~light-transmissible layer~~ fluorescent material resin, as a function of distance to said GaN semiconductor light-emitting device.

9. (currently amended) A light-emitting apparatus according to claim 5, wherein said ~~light-transmissible layer~~ fluorescent material resin and said sealing member comprise one material.

10. (previously presented) A light-emitting apparatus according to claim 2, wherein said GaN semiconductor light-emitting device comprises a chip.

11. (currently amended) A light-emitting apparatus, comprising:

a primary light source including a GaN semiconductor light-emitting device that emits a first light of a wavelength of 380 nm to 500 nm, said GaN semiconductor light-emitting device, including:

a single reflective layer disposed on a surface of a substrate on which no semiconductor layer is formed; and

a transparent electrode disposed above said single reflective layer; and;

a leadframe comprising a cup portion including a bottom surface on which said GaN semiconductor light-emitting device is mounted;

a secondary light source including comprising a fluorescent material that comprises at least one of ZnS:Eu and Y₂O₃:Ce, and a fluorescent material resin, said fluorescent material being dispersed within said fluorescent material resin, and said fluorescent material resin being contained in said cup portion; and

a sealing member that focuses light emitted from said light-emitting apparatus, said sealing member being disposed above said secondary light source,

wherein said fluorescent material absorbs said first light of a first wavelength; emitted by ~~said primary light source~~; and emits said second light of a second wavelength, which is greater than said first wavelength.

12. (currently amended) A light-emitting apparatus according to claim 11, wherein said fluorescent material is dispersed in a light-transmissible layer, which secondary light source is disposed above said primary light source,

a part of said first light emitted by said primary light source is transmitted through said light-transmissible layer fluorescent material resin, and

another part of said first light emitted by said primary light source is absorbed by said fluorescent material, said fluorescent material then emits said second light, and said second light emitted by said fluorescent material and said first light emitted by said primary light source are mixed, to thereby generate a mixed light, emitted from said light-emitting apparatus, that is different in luminescent color from said first light emitted by said primary light source.

13. (currently amended) A light-emitting apparatus according to claim 12, wherein said light-transmissible layer fluorescent material resin comprises at least one of epoxy resin, silicone resin, urea resin, and glass.

14. (canceled)

15. (canceled)

16. (previously presented) A light-emitting apparatus according to claim 15, wherein said sealing member comprises at least one of epoxy resin, silicone resin, urea resin, and glass.

17. (original) A light-emitting apparatus according to claim 15, wherein said sealing member is shaped like a bullet.

18. (currently amended) A light-emitting apparatus according to claim 12, wherein a concentration of said fluorescent material changes within said light-transmissible layer fluorescent material resin, as a function of distance to said GaN semiconductor light-emitting device.

19. (currently amended) A light-emitting apparatus according to claim 15, wherein said light-transmissible layer fluorescent material resin and said sealing member are comprise one material.

20. (previously presented) A light-emitting apparatus according to claim 12, wherein said GaN semiconductor light-emitting device is a chip.

21. (currently amended) A light-emitting apparatus, comprising:
a first light source including a GaN semiconductor light-emitting device that emits a blue light, said GaN semiconductor light-emitting device, including:
a single reflective layer disposed on a surface of a substrate on which no

semiconductor layer is formed; and

a transparent electrode disposed above said single reflective layer; and;

a leadframe comprising a cup portion including a bottom surface on which said GaN semiconductor light-emitting device is mounted;

a second light source including a first fluorescent material that absorbs said blue light emitted by said first light source and emits a green light and a fluorescent material resin, said first fluorescent material being dispersed within said fluorescent material resin, and said fluorescent material resin being contained in said cup portion;

a sealing member that focuses light emitted from said light-emitting apparatus, said sealing member being disposed above said secondary light source; and

a third light source that emits a red light,

wherein said blue light emitted by said first light source, said green light emitted by said second light source, and said red light emitted by said third light source are mixed to thereby generate white light.

22. (previously presented) A light-emitting apparatus according to claim 21, wherein said first fluorescent material comprises at least one of ZnS:Cu, Au, Al; ZnS:Cu, Al; ZnS:Cu; ZnS:Eu; and Y₂O₂S:Ce.

23. (canceled)

24. (canceled)

25. (original) A light-emitting apparatus according to claim 21, wherein said third light source includes a semiconductor light-emitting device for emitting red light.

26. (currently amended) A light-emitting apparatus according to claim 41, wherein said first fluorescent material and said second fluorescent material are dispersed in a light-transmissible layer said fluorescent material resin, which is disposed above said GaN semiconductor light-emitting device,

a part of said blue light emitted by said first light source is transmitted through said ~~light-transmissible layer~~ fluorescent material resin, and

another part of said blue light emitted by said first light source is absorbed by said first fluorescent material, which emits said green light, and said second fluorescent material, which emits said red light, and said blue light emitted by said first light source, said green light emitted by said first fluorescent material, and said red light emitted by said second fluorescent material are mixed, to thereby generate a mixed light, emitted from said light-emitting apparatus, different in luminescent color from the said blue light emitted from said first light source.

27. (currently amended) A light-emitting apparatus according to claim 26, wherein said ~~light-transmissible layer~~ fluorescent material resin comprises at least one of epoxy resin, silicone resin, urea resin, and glass.

28. (currently amended) A light-emitting apparatus according to claim 26, wherein said ~~light-transmissible layer~~ fluorescent material resin is disposed above said GaN semiconductor light-emitting device.

29. (canceled)

30. (previously presented) A light-emitting apparatus according to claim 29, wherein said sealing member comprises at least one of epoxy resin, silicone resin, urea resin, and glass.

31. (original) A light-emitting apparatus according to claim 29, wherein said sealing member is shaped like a bullet.

32. (currently amended) A light-emitting apparatus according to claim 26, wherein a concentration of at least one of said first fluorescent material and said second fluorescent material changes within said ~~light-transmissible layer~~ fluorescent material resin, as a function of distance to said GaN semiconductor light-emitting device.

33. (currently amended) A light-emitting apparatus according to claim 29, wherein said ~~light-transmissible layer~~ fluorescent material resin and said sealing member comprise one material.

34. (previously presented) A light-emitting apparatus according to claim 26, wherein said GaN semiconductor light-emitting device comprises a chip.

35. (canceled)

36. (canceled)

37. (canceled)

38. (currently amended) The light-emitting apparatus according to claim 1, wherein said a substrate of said GaN semiconductor light-emitting device comprises sapphire.

39. (currently amended) The light-emitting apparatus according to claim 11, wherein said a substrate of said GaN semiconductor light-emitting device comprises sapphire.

40. (currently amended) The light-emitting apparatus according to claim 21, wherein said a substrate of said GaN semiconductor light-emitting device comprises sapphire.

41. (currently amended) A light-emitting apparatus according to claim 21, wherein said third light source includes a second fluorescent material that absorbs said blue light emitted by said first light source and emits said red light.

42. (currently amended) A light-emitting apparatus, comprising:
a box including a cup portion including a bottom surface, said bottom surface
including a first electrode and a second electrode;
a primary light source including a GaN semiconductor light-emitting device that emits

a first light of a wavelength of 380 nm to 500 nm and is fixed to one of said first electrode and said second electrode, said GaN semiconductor light-emitting device, including:

a single reflective layer disposed on a surface of a substrate on which no light-emitting layer is formed; and

a transparent electrode disposed above said single reflective layer; and;

a secondary light source including a fluorescent material that comprises at least one of ZnS:Cu, Au, Al; ZnS:Cu, Al; and ZnS:Cu, and a resin, said fluorescent material being dispersed withing said resin, and said resin being contained in said cup portion,

wherein said fluorescent material absorbs light of [[a]] said first wavelength; ~~emitted by said primary light source;~~ and emits light of a second wavelength, which is greater than said first wavelength.

43. (currently amended) A display device, comprising a plurality of light-emitting device (LED) units, wherein each of said plurality of LED units comprises:

~~two LEDs from a group of a red LED, a green LED, and a blue LED; and~~
a light-emitting apparatus, according to claim 1, that emits white light.

44. (currently amended) A display device, comprising a plurality of light-emitting device (LED) units, wherein each of said plurality of LED units comprises:

~~two LEDs from a group of a red LED, a green LED, and a blue LED; and~~
a light-emitting apparatus, according to claim 11, that emits white light.

45. (currently amended) A display device, comprising a plurality of light-emitting device (LED) units, wherein each of said plurality of LED units comprises:

~~two LEDs from a group of a red LED, a green LED, and a blue LED;~~
a light-emitting apparatus, according to claim 41, that emits white light.

46. (previously presented) A vehicular signal display device comprising a plurality of light-emitting apparatuses according to claim 1, wherein said plurality of light-emitting apparatuses comprise a matrix, a portion of said matrix being controlled by a controller,

which turns said portion on or off.

47. (canceled)

48. (canceled)

49. (currently amended) A light-emitting apparatus according to claim 1, wherein said fluorescent material is dispersed in a light-transmissible layer that is disposed above [[a]] said sealing member, which is disposed above and focuses said light emitted said GaN semiconductor light-emitting device and absorbs said first light of a first wavelength and emits a second light of a second wavelength, which is greater than said first wavelength.

50. (currently amended) A light-emitting apparatus according to claim 41, wherein said fluorescent material resin comprises a first fluorescent material resin and a second fluorescent material resin, said first fluorescent material is dispersed in [[a]] first light-transmissible layer fluorescent material resin, which is disposed directly above said GaN semiconductor light-emitting device, and [[a]] said second fluorescent material is dispersed in [[a]] said second light-transmissible layer fluorescent material resin, which is disposed on said first light-transmissible layer fluorescent material resin.

51. (new) A light-emitting apparatus according to claim 1, wherein said light-emitting layer comprises a multiple quantum well structure.

52. (new) A light-emitting apparatus according to claim 51, wherein said multiple quantum well structure comprises well layers comprised of InGaN.

53. (new) A light-emitting apparatus according to claim 11, wherein said light-emitting layer comprises a multiple quantum well structure.

54. (new) A light-emitting apparatus according to claim 53, wherein said multiple

quantum well structure comprises well layers comprised of InGaN.

55. (new) A light-emitting apparatus according to claim 21, wherein said light-emitting layer comprises a multiple quantum well structure.

56. (new) A light-emitting apparatus according to claim 55, wherein said multiple quantum well structure comprises well layers comprised of InGaN.

57. (new) A light-emitting apparatus according to claim 42, wherein said light-emitting layer comprises a multiple quantum well structure.

58. (new) A light-emitting apparatus according to claim 57, wherein said multiple quantum well structure comprises well layers comprised of InGaN.

59. (new) A light-emitting apparatus according to claim 1, wherein said single reflective layer is directly disposed on said surface of said substrate and said surface is opposite to a side wherein said light-emitting layer is located.

60. (new) A light-emitting apparatus according to claim 11, wherein said single reflective layer is directly disposed on said surface of said substrate and said surface is opposite to a side wherein said light-emitting layer is located.

61. (new) A light-emitting apparatus according to claim 21, wherein said single reflective layer is directly disposed on said surface of said substrate and said surface is opposite to a side wherein said light-emitting layer is located.

62. (new) A light-emitting apparatus according to claim 42, wherein said single reflective layer is directly disposed on said surface of said substrate and said surface is opposite to a side wherein said light-emitting layer is located.